Linear Algebra
Homework 3 part i

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Chapter 1 : Linear Equations and Matrices

Ex Set 1.3: Matrices and Matrix Operations

18.
(a) Show that if A has a row of zeroes, and B is any matrix for which AB is defined, then AB also has a row of zeroes.
(b) Find a similar result involving a column of zeroes.

Solution:

19. Let A be any $m \times n$ matrix and let 0 be the $m \times n$ matrix each of whose entries is zero. Show that if $kA = 0$, then $k = 0$ or $A = 0$.

Solution:

25. Prove: If A and B are $n \times n$ matrices, then $\text{tr}(A + B) = \text{tr}(A) + \text{tr}(B)$.

Solution: